

## REBAR TENSION (Ldt)/COMPRESSION (Ldc) DEVELOPMENT LENGTH & HOOKS (Ldh) IN CONCRETE

| BAR SIZE | MIN BAR SPACING (IN) NOTE 3 | TENSION EMBEDMENT/ DEVELOPMENT LENGTH (Ldt) |            |                 |            |                 |            | COMPRESSION EMBEDMENT/ DEVELOPMENT LENGTH (Ldc) |          |          | HOOKED BARS (Ldh) (TENSION ONLY) |          |          |
|----------|-----------------------------|---------------------------------------------|------------|-----------------|------------|-----------------|------------|-------------------------------------------------|----------|----------|----------------------------------|----------|----------|
|          |                             | 3000 PSI                                    |            | 4000 PSI        |            | ≥ 5000 PSI      |            | 3000 PSI                                        |          | 4000 PSI |                                  | 3000 PSI |          |
|          |                             | TOP BARS NOTE 4                             | OTHER BARS | TOP BARS NOTE 4 | OTHER BARS | TOP BARS NOTE 4 | OTHER BARS | 3000 PSI                                        | 4000 PSI | 5000 PSI | 3000 PSI                         | 4000 PSI | 5000 PSI |
| 3        | 1                           | 22                                          | 17         | 19              | 15         | 17              | 13         | 8.5                                             | 7.5      | 7        | 8.5                              | 7.5      | 6.5      |
| 4        | 1                           | 29                                          | 22         | 25              | 19         | 23              | 17         | 11                                              | 9.5      | 9        | 11                               | 9.5      | 8.5      |
| 5        | 1 1/4                       | 36                                          | 28         | 31              | 24         | 28              | 22         | 14                                              | 12       | 11.5     | 14                               | 12       | 11       |
| 6        | 1 1/2                       | 43                                          | 33         | 37              | 29         | 34              | 26         | 16.5                                            | 14.5     | 13.5     | 16.5                             | 14.5     | 13       |
| 7        | 1 3/4                       | 63                                          | 48         | 54              | 42         | 49              | 38         | 19.5                                            | 17       | 16       | 19.5                             | 17       | 15       |
| 8        | 2                           | 71                                          | 55         | 62              | 48         | 56              | 43         | 22                                              | 19       | 18       | 22                               | 19       | 17       |
| 9        | 2 1/4                       | 81                                          | 62         | 70              | 54         | 63              | 48         | 25                                              | 21.5     | 20.5     | 25                               | 21.5     | 19.5     |
| 10       | 2 1/2                       | 91                                          | 70         | 79              | 61         | 71              | 54         | 28                                              | 24.5     | 23       | 28                               | 24.5     | 22       |
| 11       | 3                           | 101                                         | 78         | 87              | 67         | 78              | 60         | 31                                              | 27       | 25.5     | 31                               | 27       | 24       |

### GENERAL NOTES

- LENGTHS SHOWN CONFORM TO NON-SEISMIC PROVISIONS OF ACI 318-14 FOR NORMAL WT CONCRETE AND UNCOATED BARS W/  $F_y=60$  KSI (YIELD STRENGTH OF REBARS).
- ALL LENGTHS ARE IN INCHES.
- BAR SPACING IS MEASURED AS CLEAR DISTANCE BETWEEN BARS. FOR BARS WITH A CLEAR SPACING OF LESS THAN  $2d_b$ , MULTIPLY TABULATED VALUES BY 1.5.
- TOP BARS ARE BARS SO PLACED THAT 12 INCHES OR MORE OF FRESH CONCRETE IS CAST IN MEMBER BELOW REINFORCEMENT.
- SEE CONCRETE NOTES FOR SPECIFIED CONCRETE STRENGTH.
- CLEAR COVER FOR REINFORCING SHALL NOT BE LESS THAN 1 BAR DIAMETER OR AS SPECIFIED IN SECTION 20.6.1.3 OF ACI 318-14.
- MULTIPLY THE ABOVE LENGTHS BY 1.33 FOR CONCRETE WITH LIGHTWEIGHT AGGREGATE.
- MULTIPLY THE ABOVE LENGTHS BY 1.5 FOR EPOXY COATED REINFORCING.
- COMPRESSION DEVELOPMENT LENGTH OF REBARS ENCLOSED WITHIN #3 SPIRAL REINFORCEMENT W/ NO MORE THAN @4" PITCH OR #4 TIES @4"OC MAY BE MULTIPLIED BY 0.75.

## LAP SPLICE LENGTH (Lst& Lsc) IN CONCRETE

| BAR SIZE | TENSION LAP SPLICE (Lst) |          |            | COMPRESSION LAP SPLICE (Lsc) |
|----------|--------------------------|----------|------------|------------------------------|
|          | 3000 PSI                 | 4000 PSI | ≥ 5000 PSI | ≥ 3000 PSI                   |
| 3        | 22                       | 19       | 17         | 12                           |
| 4        | 29                       | 25       | 23         | 15                           |
| 5        | 36                       | 31       | 28         | 19                           |
| 6        | 43                       | 37       | 34         | 22.5                         |
| 7        | 63                       | 54       | 49         | 26.5                         |
| 8        | 72                       | 62       | 56         | 30                           |
| 9        | 81                       | 70       | 63         | 34                           |
| 10       | 91                       | 79       | 71         | 38.5                         |
| 11       | 101                      | 87       | 78         | 42.5                         |

### GENERAL NOTES

- LENGTHS SHOWN CONFORM TO NON-SEISMIC PROVISIONS OF ACI 318-14 FOR NORMAL WT CONCRETE AND UNCOATED BARS W/  $F_y=60$  KSI (YIELD STRENGTH OF REBARS).
- ALL LENGTHS ARE IN INCHES.
- SPLICES SHALL BE STAGGERED MINIMUM OF 24" O.C.
- SEE CONCRETE NOTES FOR SPECIFIED CONCRETE STRENGTH.
- CLEAR COVER FOR REINFORCING SHALL NOT BE LESS THAN 1 BAR DIAMETER OR AS SPECIFIED IN SECTION 20.6.1.3 OF ACI 318-14.
- MULTIPLY THE ABOVE LENGTHS BY 1.33 FOR CONCRETE WITH LIGHTWEIGHT AGGREGATE.
- MULTIPLY THE ABOVE LENGTHS BY 1.5 FOR EPOXY COATED REINFORCING.
- MULTIPLY THE ABOVE LENGTHS BY 1.5 FOR BARS SPACED LESS THAN  $2d_b$  CLEAR.
- COMPRESSION DEVELOPMENT LENGTH OF REBARS ENCLOSED WITHIN #3 SPIRAL REINFORCEMENT W/ NO MORE THAN @4" PITCH OR #4 TIES @4" O.C. MAY BE MULTIPLIED BY 0.75.

## TENSION DEVELOPMENT & TENSION LAP SPLICE LENGTH OF REBARS IN MASONRY

| BAR SIZE   | 3  | 4  | 5  | 6  | 7   | 8   | 9   |
|------------|----|----|----|----|-----|-----|-----|
| D&S LENGTH | 18 | 32 | 49 | 98 | 143 | 216 | 296 |
| HOOKS      | 5  | 7  | 8  | 10 | 12  | 13  | 15  |

### GENERAL NOTES

- LENGTHS SHOWN CONFORM TO NON-SEISMIC PROVISIONS OF TMS 402-13/ACI 530-13/ FOR NORMAL WT MASONRY BLOCK ( $f'm=1500$  PSI OR BETTER) AND UNCOATED BARS W/  $F_y=60$  KSI (YIELD STRENGTH OF REBARS).
- ALL LENGTHS ARE IN INCHES.
- SPLICED BARS SHALL NOT BE FARTHER APART THAN THE MINIMUM OF 8" OR  $\frac{1}{2}$  THE DEVELOPMENT LENGTH.
- SEE MASONRY NOTES FOR SPECIFIED BLOCK STRENGTH.
- MULTIPLY THE ABOVE LENGTHS BY 1.33 FOR CONCRETE WITH LIGHTWEIGHT AGGREGATE.
- MULTIPLY THE ABOVE LENGTHS BY 1.5 FOR EPOXY COATED REINFORCING.
- AT WALL INTERSECTIONS HORIZONTAL REBARS SHALL BENT AROUND EDGE VERTICAL REINFORCEMENT W/ A 90° HOOK & SHALL EXTEND INTO INTERSECTING WALL FOR A DISTANCE OF, AT MINIMUM, THE DEVELOPMENT LENGTH.
- AT ALL OTHER INTERSECTIONS HORIZONTAL REBARS SHALL BENT AROUND EDGE VERTICAL REINFORCEMENT W/ A 180° HOOK. THE ENDS OF SINGLE LEG OR U-STIRRUP SHALL BE ANCHORED BY A STANDARD HOOK PLUS AN EFFECTIVE EMBEDMENT OF  $\frac{1}{2}$  OF THE DEVELOPMENT LENGTH.

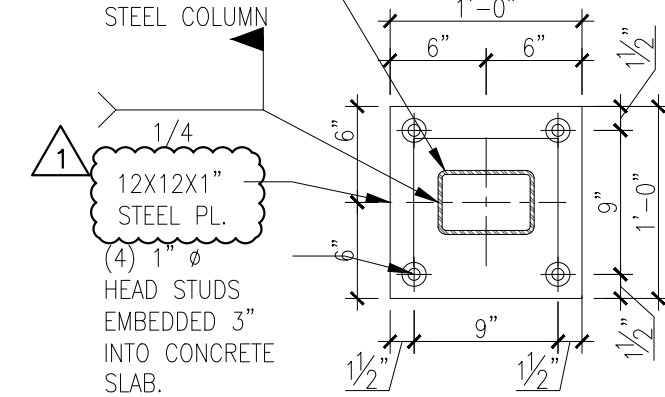
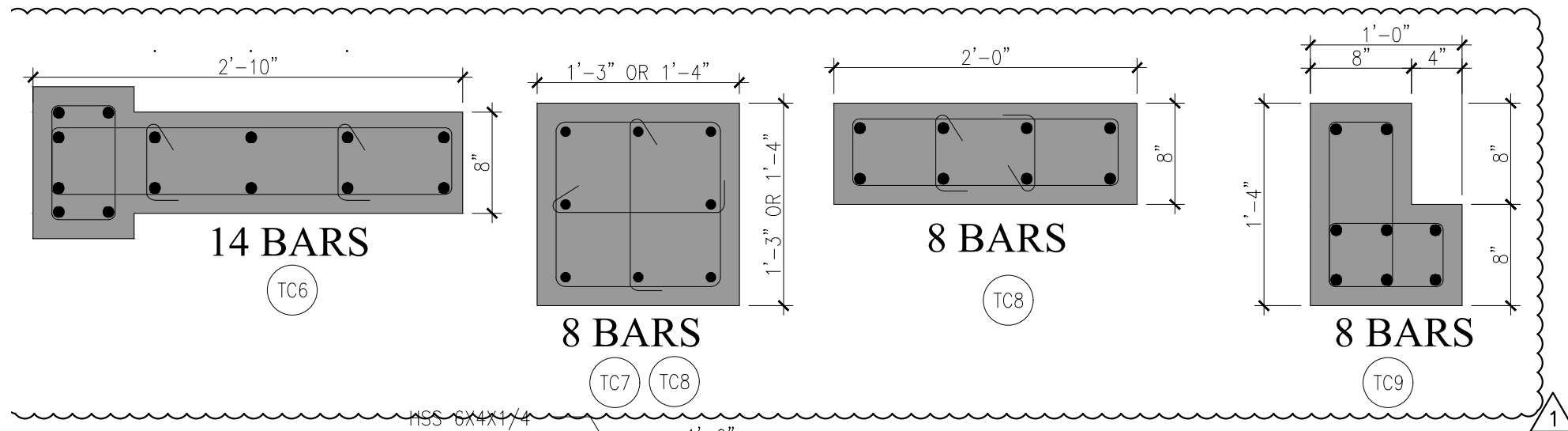
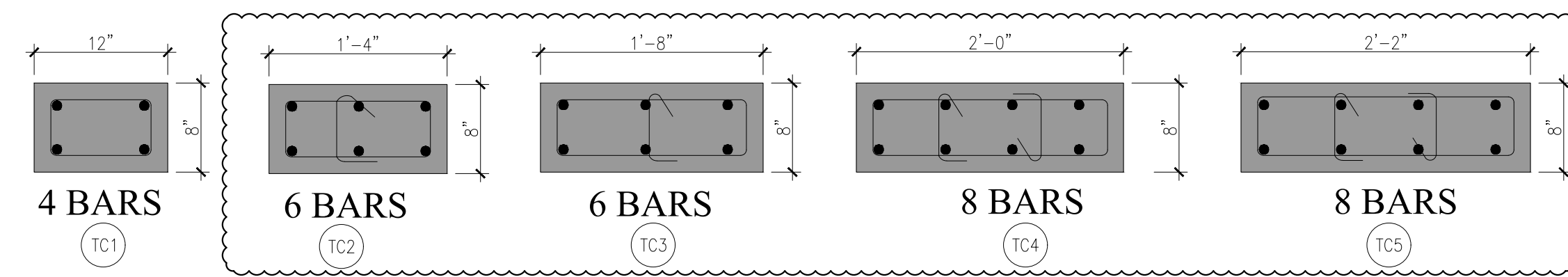
| MARK | SIZE                | REINFORCEMENT VERTICAL OR BASE PLATE                   | REINFORCEMENT TIES OR CAP PLATE                        | REMARKS                                |
|------|---------------------|--------------------------------------------------------|--------------------------------------------------------|----------------------------------------|
| TC1  | 8"x12"              | 4-#5                                                   | #3 @ 8" O.C                                            | CONCRETE COLUMN                        |
| TC2  | 8"x16"              | 6-#5                                                   | #3 @ 8" O.C                                            | CONCRETE COLUMN                        |
| TC3  | 8"x20"              | 6-#5                                                   | #3 @ 8" O.C                                            | CONCRETE COLUMN                        |
| TC4  | 8"x24"              | 8-#5                                                   | #3 @ 8" O.C                                            | CONCRETE COLUMN                        |
| TC5  | 8"x26"              | 8-#5                                                   | #3 @ 8" O.C                                            | CONCRETE COLUMN                        |
| TC6  | SEE BAR ARRANGEMENT | 14-#5                                                  | #3 @ 8" O.C                                            | CONCRETE COLUMN                        |
| TC7  | 15"x15"             | 8-#6                                                   | #3 @ 8" O.C                                            | CONCRETE COLUMN                        |
| TC8  | 16"x16"             | 8-#6                                                   | #3 @ 8" O.C                                            | CONCRETE COLUMN                        |
| TC9  | SEE BAR ARRANGEMENT | 8-#5                                                   | #3 @ 8" O.C                                            | CONCRETE COLUMN                        |
| TC10 | NOT USED            |                                                        |                                                        |                                        |
| ST1  | HSS 6"x4"x1/4"      | 12"x12"x1" THK STEEL PLATE, SEE COLUMN BAR ARRANGEMENT | 12"x12"x1" THK STEEL PLATE, SEE COLUMN BAR ARRANGEMENT | STEEL COLUMN $F_y=46$ KSI LOAD BEARING |

| MARK   | SIZE (W x L)   | DEPTH | REINFORCEMENT |            | REMARKS            | f'c      |
|--------|----------------|-------|---------------|------------|--------------------|----------|
|        |                |       | SHORT BARS    | LONG BARS  |                    |          |
| MF-16  | 16" CONT.      | 12"   | #5 @ 12"      | 3 #5 CONT. | MONOLITHIC FOOTING | 3000 PSI |
| WF-36  | 36" CONT.      | 12"   | #5 @ 12"      | 5 #5 CONT. | WALL FOOTING       | 3000 PSI |
| WF-48  | 48" CONT.      | 14"   | #5 @ 12"      | 5 #5 CONT. | WALL FOOTING       | 3000 PSI |
| F3.0   | 3'-0" x 3'-0"  | 12"   | 3-#5          | 3-#5       | ISOLATED FOOTING   | 3000 PSI |
| F3.5   | 3'-6" x 3'-6"  | 12"   | 3-#5          | 3-#5       | ISOLATED FOOTING   | 3000 PSI |
| F3.5A  | 3'-6" x 3'-0"  | 12"   | 3-#5          | 3-#5       | ISOLATED FOOTING   | 3000 PSI |
| F4.0   | 4'-0" x 4'-0"  | 12"   | 4-#5          | 4-#5       | ISOLATED FOOTING   | 3000 PSI |
| F4.5   | 4'-6" x 4'-6"  | 12"   | 4-#5          | 4-#5       | ISOLATED FOOTING   | 3000 PSI |
| F5.0   | 5'-0" x 5'-0"  | 12"   | 5-#5          | 5-#5       | ISOLATED FOOTING   | 3000 PSI |
| F5.5   | 5'-6" x 5'-6"  | 14"   | 5-#5          | 5-#5       | ISOLATED FOOTING   | 3000 PSI |
| F6.0   | 6'-0" x 6'-0"  | 14"   | 6-#5          | 6-#5       | ISOLATED FOOTING   | 3000 PSI |
| F6.5   | 6'-6" x 6'-6"  | 15"   | 7-#5          | 7-#5       | ISOLATED FOOTING   | 3000 PSI |
| F6.67  | 6'-8" x 3'-6"  | 12"   | 6-#5 T&B      | 4-#5 T&B   | ISOLATED FOOTING   | 3000 PSI |
| F7.0   | 7'-0" x 7'-0"  | 12"   | 8-#5 T&B      | 8-#5 T&B   | ISOLATED FOOTING   | 3000 PSI |
| F7.0A  | 7'-0" x 5'-6"  | 12"   | 8-#5 T&B      | 5-#5 T&B   | ISOLATED FOOTING   | 3000 PSI |
| F12.0  | 12'-0" x 9'-0" | 15"   | 13-#5 T&B     | 12-#5 T&B  | ISOLATED FOOTING   | 3000 PSI |
| F11.67 | 11'-8" x 3'-6" | 12"   | #5 @ 12"      | 3-#5       | ISOLATED FOOTING   | 3000 PSI |

### NOTES

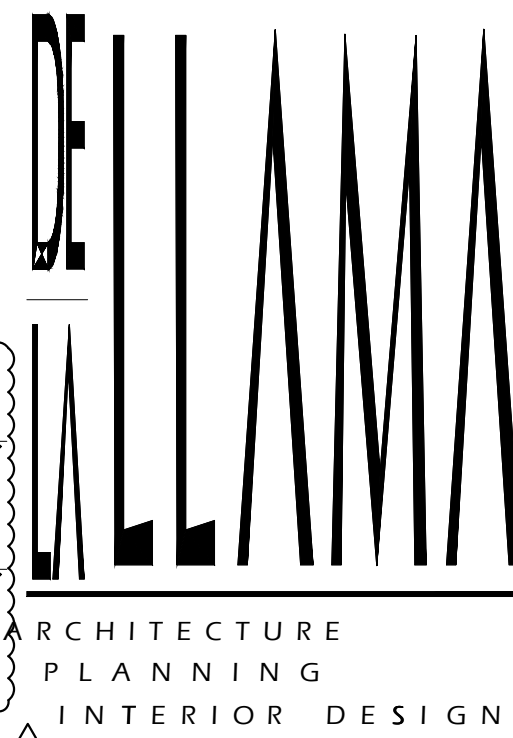
- CONTRACTOR TO PROVIDE NUMBER OF CORNER BARS AS FOOTING LONGITUDINAL REINF. LAPPED MIN. 48" BAR DIAMETERS, WHEN FOOTING HAS MORE BARS, THE TOTAL OF CORNER BARS SHALL BE THE SAME AS THE NUMBER OF BARS IN THE LARGER FOOTING.
- PROVIDE 2 # 5 CONTINUOUS WALL FOOTING TOP BARS (TYP) AT EACH OPENING GREATER THAN 6'-0". EXTEND 2'-0"(MIN) BEYOND EACH OPENING.

## COLUMN BAR ARRANGEMENT



## BASE PLATE

ST1

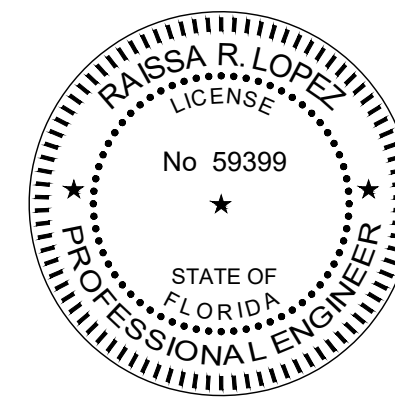


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FILE NAME  
24-0609

DATE

NOVEMBER 7TH, 2024

| REVISION    | DATE      | BY     |
|-------------|-----------|--------|
| REVISION #1 | 4/22/2025 | B.D.C  |
| REVISION #2 | 04/13/26  | CLIENT |
| REVISION #3 | 06/09/26  | CLIENT |

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